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## Can Social Categorisation Elicit Own-Group Biases in Face Recognition

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Harrison, Virginia and Hole, Graham (2018). Can Social Categorisation Elicit Own-Group Biases in Face Recognition. In: British Psychological Society Cognitive Section Conference, 29-31 Aug 2018, Liverpool.

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# **Can Social Categorisation Elicit Own-Group Biases in Face Recognition**

# Biases in face recognition





# Biases in face recognition



# Biases in face recognition



1



2



3



4



5



6



7



8



9



10

# Biases in face recognition

## Own Race Bias

- Meissner & Brigham (2001)
  - meta analysis of 39 studies & ~5000 participants
  - found a substantial overall own race effect
  - ~ 1.5x more likely to correctly identify a face of our own race & misidentify a face of another race

## Own Age Bias

- Rhodes & Anastasi (2012)
  - meta analysis of hits 43 studies & 4101 participants
  - accuracy was reliably better for same-age compared with other-age faces for children, younger and older adults
- No single, unified theory of why these effects occur

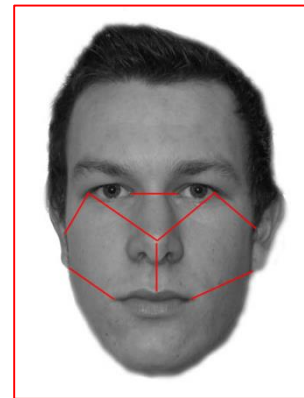
# Expertise & face processing

- We have more contact with some groups of faces than others, and are therefore more experienced with those faces...
- So... are we own-group face experts?
- Face recognition based on perception of facial characteristics which vary on a continuum from discrete/featural → relational/configural

featural



configural



- **Configural processing** underpins perceptual expertise

# Expertise & face processing

- The Face Inversion Effect

- Face recognition more impaired by inversion than other objects (Yin, 1969)
- Inversion disproportionately affects configural/holistic processing





# Expertise & face processing

- Composite Face Effect
  - More difficult to recognise face halves when they are aligned, compared to misaligned



# Expertise & face processing

- Composite Face Effect
  - More difficult to recognise face halves when they are aligned, compared to misaligned



# Expertise & the own race bias

**We have more contact with some groups of faces than others, and are therefore more experienced with those faces...**

**So... are we own-group face experts?**

- The Own-Race Bias

- Rhodes et al (1989)

- Inversion affects own race **more** than other race faces
    - Own-race faces processed more configurally

- Michel et al (2006)

- composite faces to show faces of different races to our own are perceived less holistically/configurally

# Expertise & the own age bias

## ○ The Own-Age Bias

- Perfect & Moon (2005)
  - opposite pattern was found
  - inversion to affected other-age faces **more** than own age faces
- Kuefner et al (2008)
  - used participants with high and low contact to other-age faces
  - a greater inversion effect for adult faces compared to child faces was found for the **low contact** group
  - in contrast, the inversion cost was similar for both age faces for the **high contact** participants
- deHerring & Rossion (2008)
  - used the composite face effect with high and low contact adults
  - **low contact** group showed a larger CFE for adult compared to children's faces
  - **high contact** group showed no CFE difference for the two stimuli age groups



# Social explanations...

## Based on...

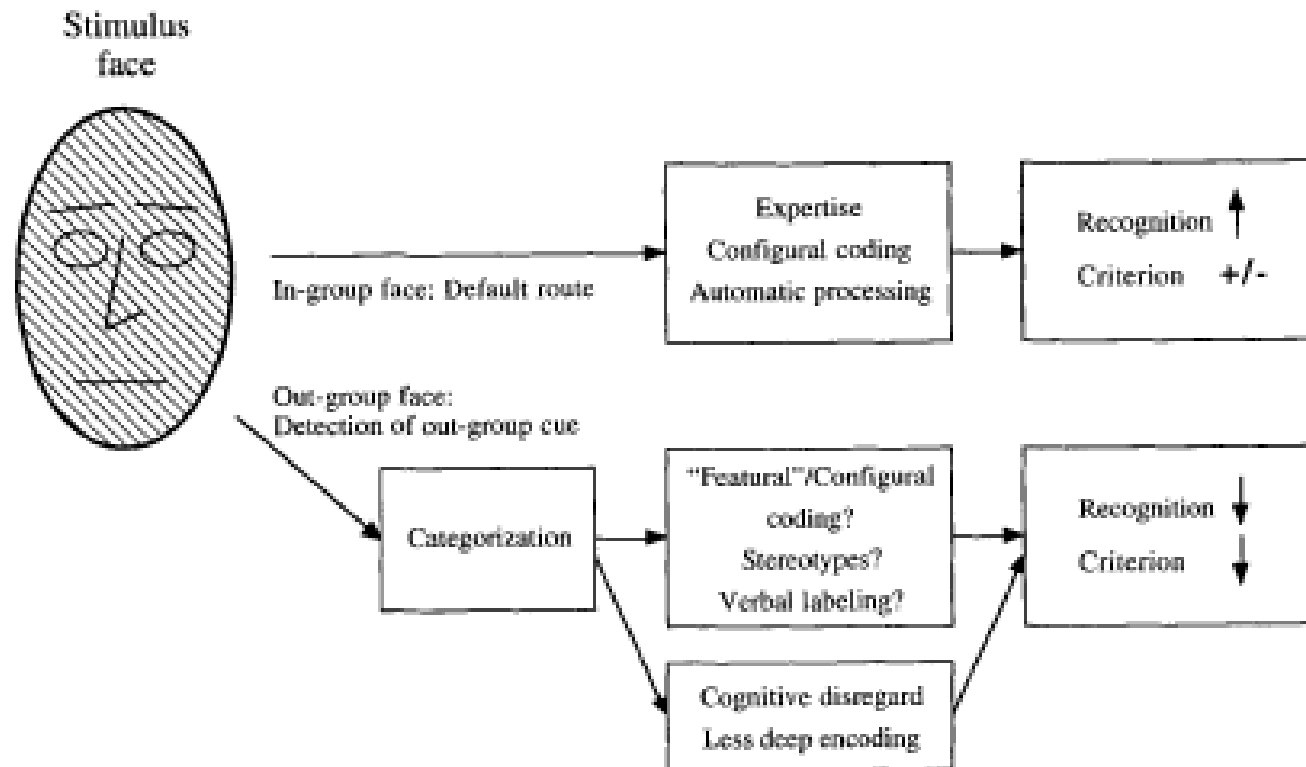
- Rodin's Social Disregard Model (1987)
  - we are “cognitive misers” who only pay attention to what is important to us, as a result we cognitively disregard what/who is not, making them “invisible”

## Recent social categorisation theories

- Sporer's In-Group Out-Group Model (2001)
- Hugenberg, Young, Bernstein, & Sacco (2010)
  - superior recognition of in-group faces results from an *initial categorization* of a face as belonging to an in-group or out-group
  - if an out-group cue detected, faces are subjected to shallow processes, at category level (featural)
  - if an in-group cue is detected, deeper individuating processing takes place (configural)

# Social explanations...

- Sporer's In-Group Out-Group Model (2001)
- Hugenberg, Young, Bernstein, & Sacco (2010)
  - focuses on how social motivation can affect the classification of the face



# Is “mere categorisation” enough?

## Beyond physiognomic markers

- Bernstein, Young, & Hugenberg, 2007
  - Faces classified at encoding by either:

University Affiliation

or

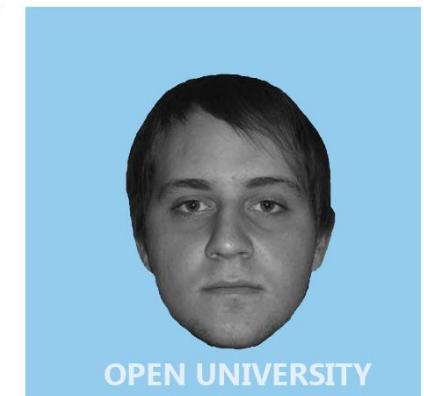
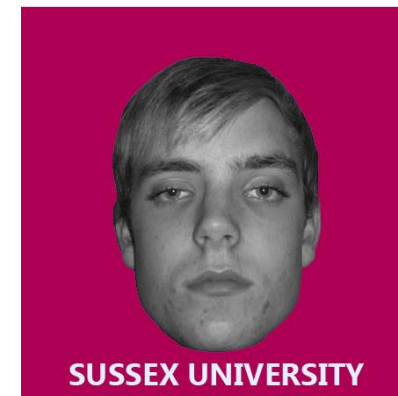
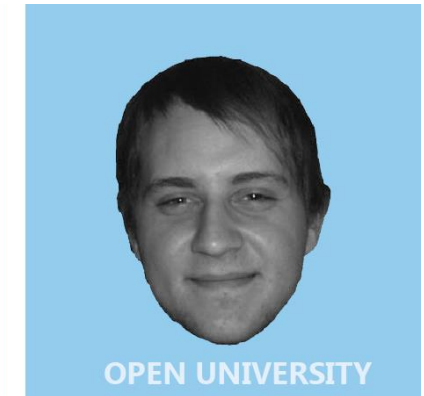
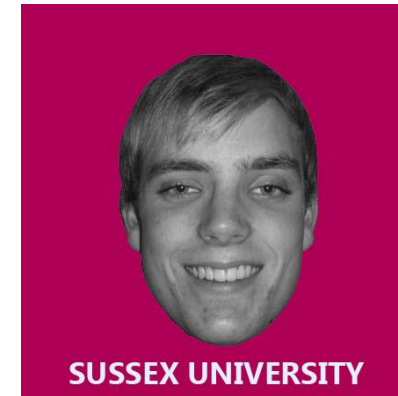
‘Personality Type’

- Own-Group Bias found for both!



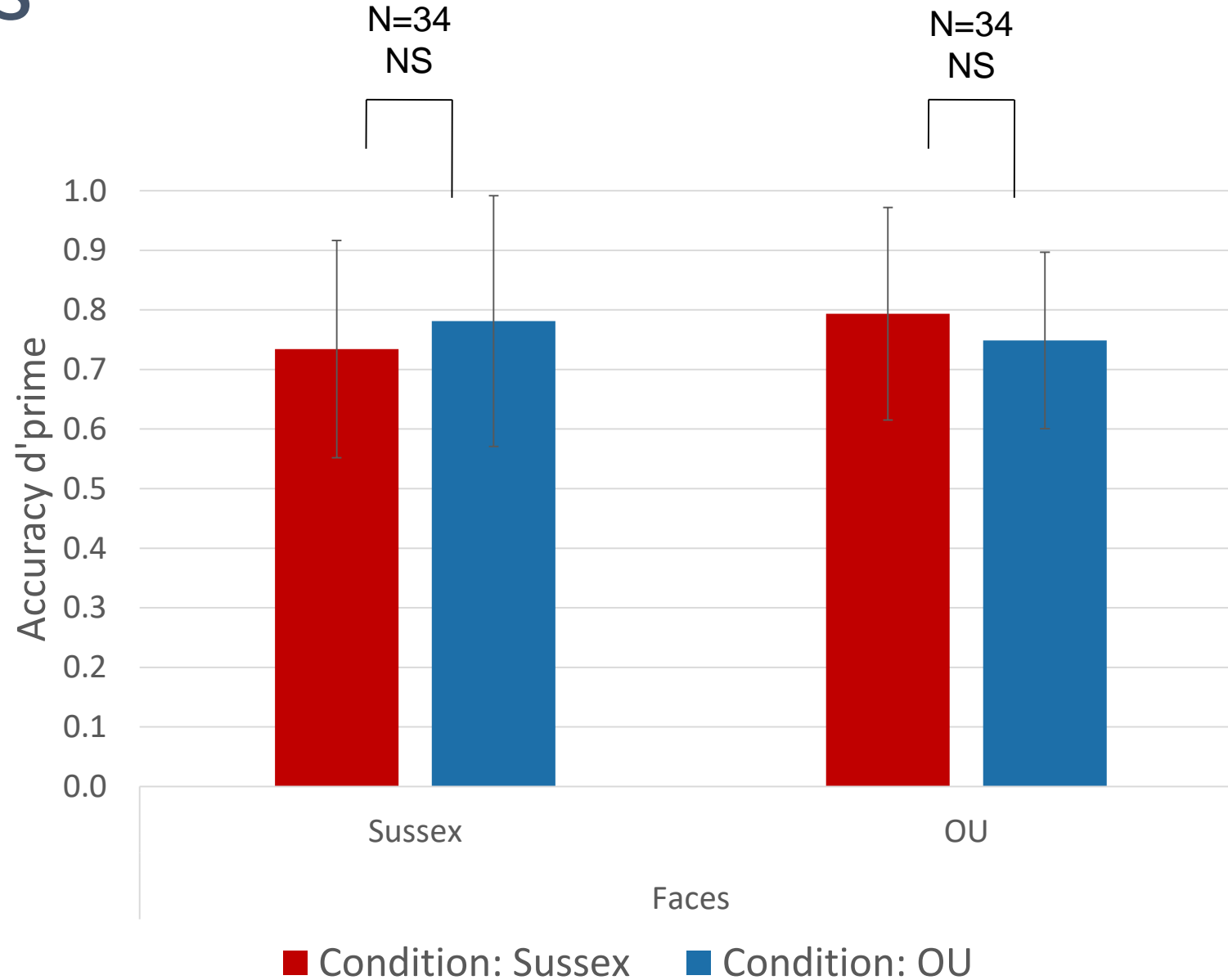
# Experiment 1

- Materials
  - 80 digital photos of young adult white males
    - smiling & neutral positions
- Procedure
  - learning phase
    - 40 photos at a rate of 3 seconds per picture
    - half labelled Sussex; half labelled OU
  - filler task
  - test phase
    - 40 seen before in alternate pose
    - 40 new faces
    - participants were asked to make “old”/”new” judgements
    - faces counterbalanced for old/new; smiling/neutral; Sussex/OU





# Results



# Findings - summary

## Social Categorisation

- If Own Group Biases are driven by categorisation of faces as own- or other-group, one would expect to see:

- ✗ • a recognition advantage for faces labelled as own group, compared to other group
- (i.e. a significant interaction between group membership of participants and faces)

- Results are more compatible with a **perceptual expertise** account.

...however maybe University membership isn't socially important enough

# Families divided by Brexit: 'Part of me just wants to avoid my dad completely now'

In June, the EU referendum result created many family rifts, especially between young remainers and older relatives who voted leave. Has time been a healer, or are the arguments still raging?



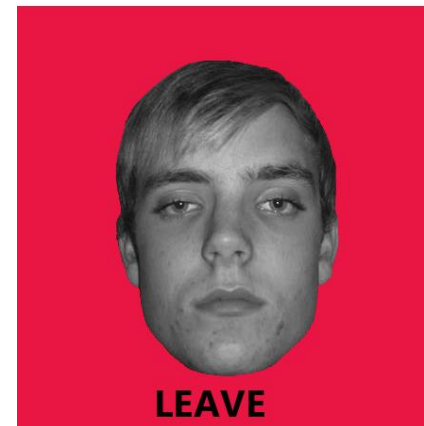
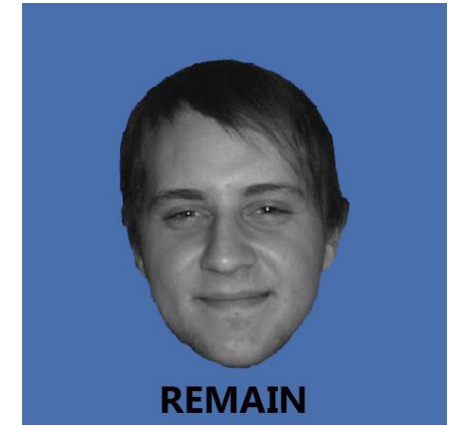
## Brexit breakup: did it cause a rift between you and your partner?

**Has your relationship come under strain since Brexit? Did it add pressure when you and your partner were on the brink of divorce? Share stories**



# Experiment 2

- Materials
  - 80 digital photos of young adult white males
    - smiling & neutral positions
- Procedure
  - learning phase
    - 40 photos at a rate of 3 seconds per picture
    - half labelled 'Leave'; half labelled 'Remain'
  - filler task
  - test phase
    - 40 seen before in alternate pose
    - 40 new faces
    - participants were asked to make "old"/"new" judgements
    - faces counterbalanced for old/new; smiling/neutral; voting type





# Experiment 2

Did you vote in the recent EU Referendum?

- ☒ Yes
- ☐ No

What did you vote for?

- ☐ Leave
- ☐ Remain

How do you feel about the outcome of the referendum?

- ☐ I'm very unhappy about the outcome
- ☐ I'm somewhat unhappy about the outcome
- ☐ I am neither happy nor unhappy about the outcome
- ☐ I'm somewhat happy about the outcome
- ☐ I'm very happy about the outcome

Did you vote in the recent EU Referendum?

- ☐ Yes
- ☒ No

If you were told that you had to vote now, what would you vote for?

- ☐ Leave
- ☐ Remain

How do you feel about the outcome of the referendum?

- ☐ I'm very unhappy about the outcome
- ☐ I'm somewhat unhappy about the outcome
- ☐ I am neither happy nor unhappy about the outcome
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- ☐ I'm very happy about the outcome

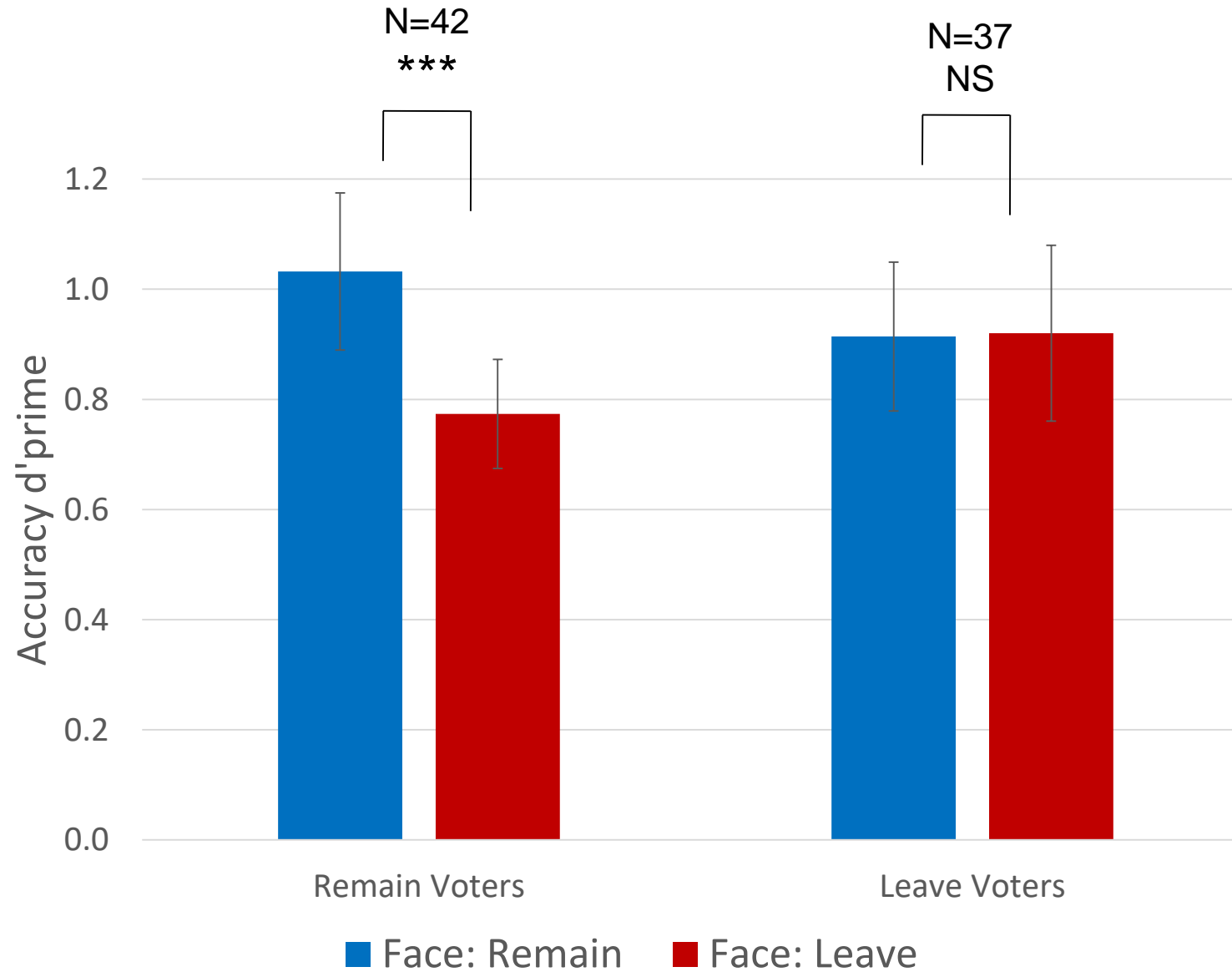
# Results

Significant effect of  
facial category:

$$F(1,77)=5.65, p=.02, \eta_p^2=.07$$

Significant  
interaction:

$$F(1,77)=6.20, p=.015, \eta_p^2=.08$$



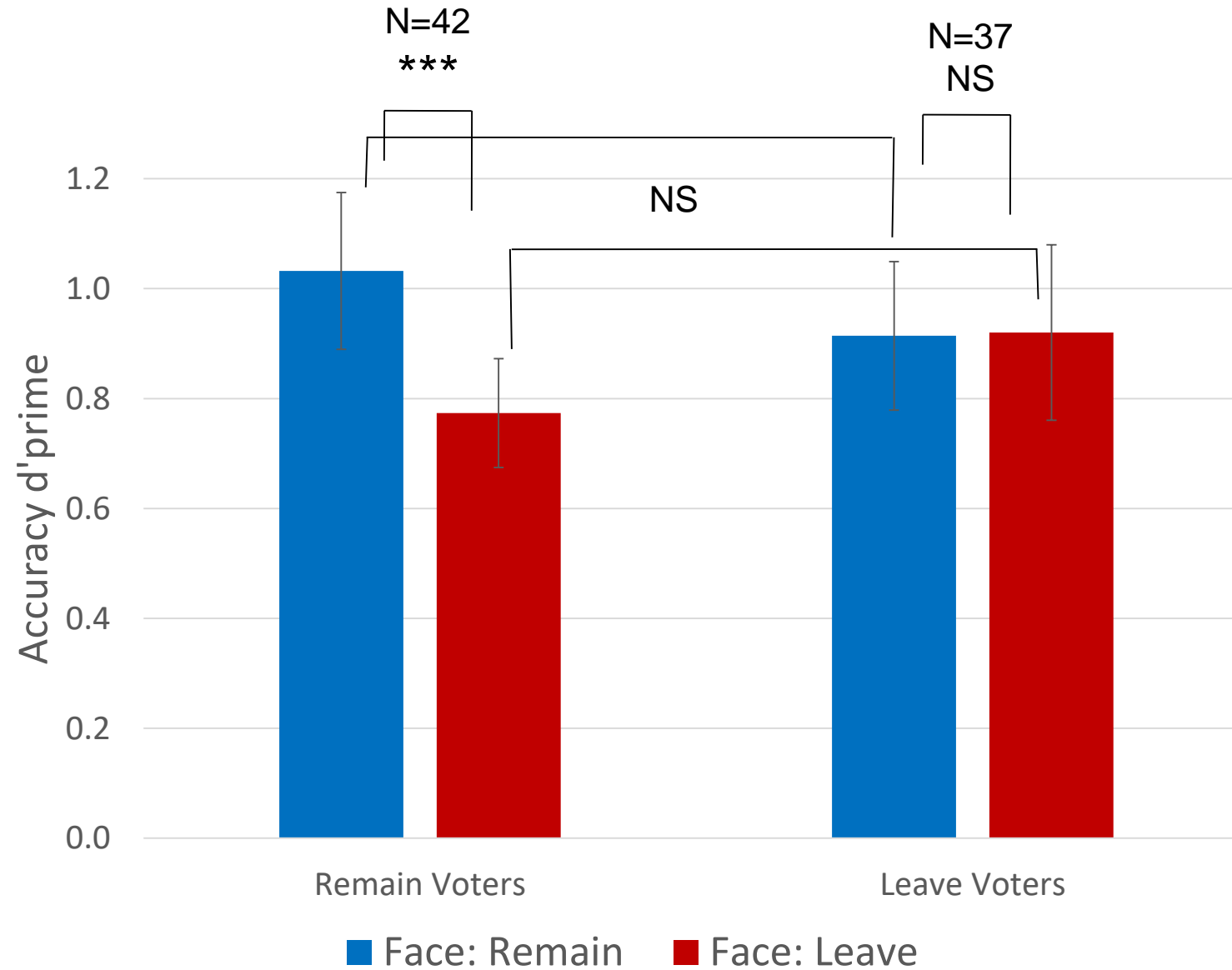
# Results

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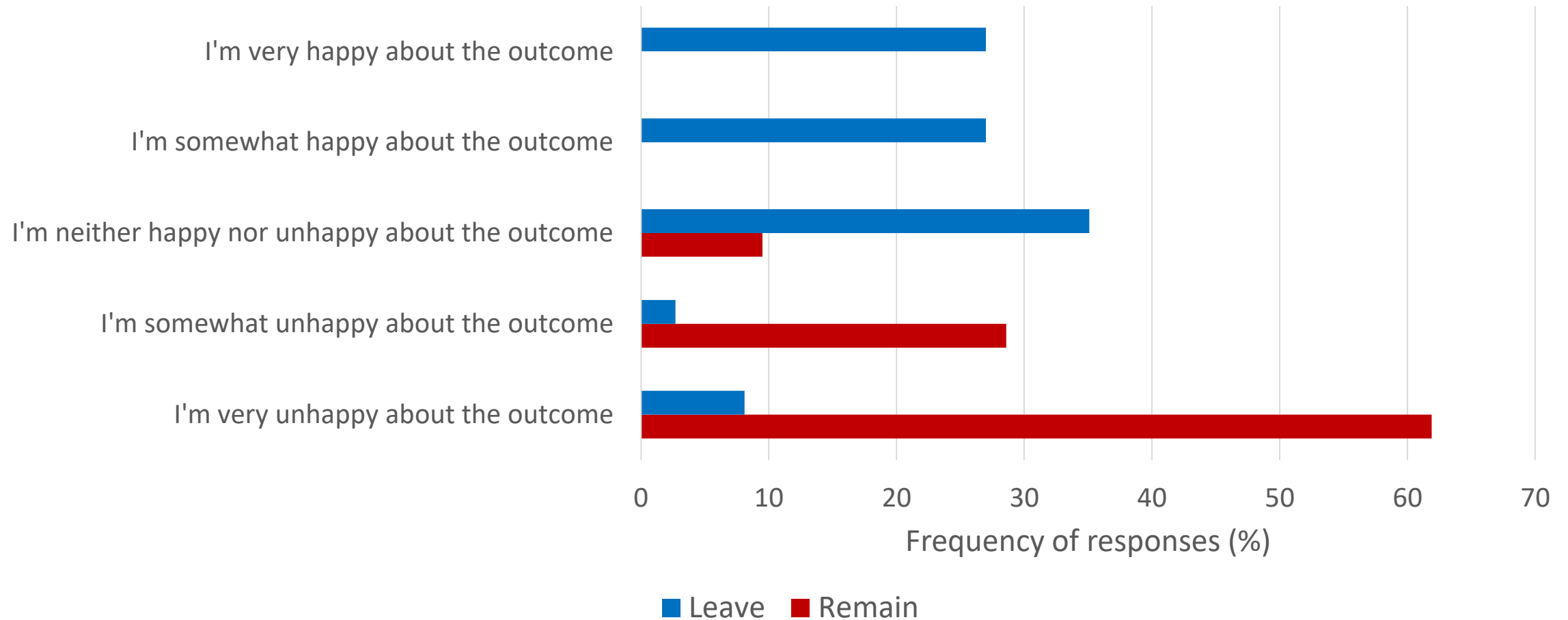
Significant  
interaction:

$$F(1,77)=6.20, p=.015, \eta_p^2=.08$$



# Results

## Satisfaction with vote outcome





# Results

- D'Prime difference scores:  $d'$  for remain faces –  $d'$  for leave faces
  - Larger positive  $d'$  diff score = better recognition for remain faces
  - More negative  $d'$  scores = better recognition for leave faces
- Satisfaction scale (1-5):
  - Low scores unhappy with the outcome; high score happy
- Spearman correlation showed a significant negative relationship between these two variables ( $r_s = -.22$ ,  $p < .05$ )
  - those with stronger attitudes towards the referendum outcomes had a larger difference scores
  - the more unhappy participants were with the referendum outcome, the greater their recognition bias towards remain faces
  - the happier participants were with the outcome, the greater their recognition advantage for leave faces

# Findings - interpretation

## Social Categorisation

- If Own Group Biases are driven by categorisation of faces as own- or other- group, one would expect to see:

- ✓  • a recognition advantage for faces labelled as own-group, over out-group faces
- ✓ • a correlation between in-group recognition advantage and indices of social interest/motivation in that group

## Perceptual Expertise

- If the Own Group Biases are the result of perceptual expertise, we would expect to see:

- ✓  • no recognition advantages for own-group faces
-  • no correlation between in-group recognition advantage and indices of social interest/motivation in that group

# Final Thoughts

## Mixed support...

- Could it be that social categorisation is enough to elicit own group biases, provided we feel strongly enough about the groupings?
- ...or Type 1 Error?
  - Similar study with Premier League supporters found no simple interaction between in/out group membership and in/out group faces
  - No relationship with The Sport Spectator Identification Scale (Wann & Branscombe, 1993); a measure of fandom
  - Many others that I'm aware of who have carried out similar studies and found nothing

# Thank you!

...any questions?

# Football Faces

Do you support a premier league football team? If so, which football team do you support?

I don't support a football team  
The team I support isn't listed here  
AFC Bournemouth  
Arsenal  
Burnley  
Chelsea  
Crystal Palace  
Everton  
Hull City  
Leicester City  
Liverpool  
Manchester City  
Manchester United  
Middlesbrough  
Southampton  
Stoke City  
Sunderland  
Swansea City  
Tottenham Hotspur



In Group



Out Group



# Results

